

Claims

1. A method for defibering and extracting kraft pulp from old corrugated cardboards, the method comprising the  
5 steps of:

providing old corrugated cardboards and a first predetermined amount of white water for a pulper and crushing, separating and defibering the old corrugated cardboards;

10 detecting a defibering state of old corrugated cardboard pieces;

exhausting a short fiber suspension when the defibering state of the old corrugated cardboard pieces reaches to a first target value;

15 providing a second predetermined amount of white water for the pulper and crushing, separating and defibering the remaining old corrugated cardboard pieces, and detecting a defibering state of the remaining old corrugated cardboard pieces; and

20 exhausting a long fiber suspension when the defibering state of the remaining old corrugated cardboard pieces reach to a second target value.

2. The method as recited in claim 1, further  
25 comprising the step of determining an amount of the white water based on weight of the provided old corrugated cardboards.

3. The method as recited in claim 2, wherein the  
30 first target value is a consistency of the short fiber suspension in the pulper and is established by the weight

of the old corrugated cardboards and the white water.

4. The method as recited in claim 2, wherein the first target value is defibering time of the short fiber suspension in the pulper and is established by the weight of the old corrugated cardboards and the white water.

5. The method as recited in claim 3, wherein the second target value is a consistency of the long fiber suspension in the pulper and is established by the weight of the old corrugated cardboards and the white water.

6. The method as recited in claim 4, wherein the second target value is defibering time of the long fiber suspension in the pulper and is established by the weight of the old corrugated cardboards and the white water.

7. The method as recited in claim 1, wherein the first and second predetermined amounts of white water are respectively decided by a level meter to measure a level of the white water in the pulper.

8. The method as recited in claim 1, wherein the first and second predetermined amounts of white water are decided by flow meters to measure an input amount of the white water to the pulper and an output amount of the white water from the pulper, respectively.

9. The method as recited in claim 1, wherein the white water is provided for the pulper to makes the white water rotate.

10. An apparatus for defibering and extracting kraft pulp from old corrugated cardboards comprising:

5 a pulper for crushing, separating and defibering old corrugated cardboards using white water;

detecting means for detecting defibering states of old corrugated cardboard pieces and outputting detected data;

10 exhausting means for selectively exhausting short and long fiber suspensions from the pulper; and

control means for storing a first target value indicative of a defibering sate of the short fiber suspension of the old corrugated cardboard pieces and a second target value indicative of a defibering sate of the long fiber suspension of the old corrugated cardboard pieces, comparing the detected data from the detecting means with the first and second target values, and controlling the exhausting means in order to selectively exhaust the short and long fibers from the pulper.

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11. The apparatus as recited in claim 10, wherein the detecting means is a consistency detecting means to detect a consistency of the short and long fiber suspensions.

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12. The apparatus as recited in claim 11, wherein the consistency detector comprises:

a suction strainer for extracting the short and long fiber suspensions from the pulper;

30 a circulation pump for circulating the extracted short and long fiber suspension from the suction strainer

to the pulper;

a consistency detector disposed between the pulper and the circulation pump for detecting consistency of the short and long fiber suspensions.

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13. The apparatus as recited in claim 11, further comprising a level meter for measuring a level of the white water in the pulper.

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14. The apparatus as recited in claim 11, further comprising means for detecting an amount of the white water in the pulper and wherein the means comprises:

a first flow meter provided to a white water pipe in order to measure an amount of the white water provided to the pulper; and

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a second flow meter provided to the exhausting means in order to measure an amount of the white water exhausted from the pulper.

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15. The apparatus as recited in claim 10, further comprising:

a conveyer for providing the old corrugated cardboards to the pulper; and

a weight detecting means for detecting weight of the old corrugated cardboards.

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16. The apparatus as recited in claim 11, wherein the exhausting means comprises:

a pump for exhausting the short and long fiber suspensions in the pulper;

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first and second chests for containing the short and

long fiber suspensions, respectively;

first and second valves respectively provided to inlets of the first and second chests.

5           17. The apparatus as recited in claim 11, wherein the first target value is a consistency of the short fiber suspension in the pulper and is established by the weight of the old corrugated cardboards and the white water.

10           18. The apparatus as recited in claim 10, wherein the first target value is defibering time of the short fiber suspension in the pulper and is established by the weight of the old corrugated cardboards and the white water.

15           19. The apparatus as recited in claim 17, wherein the second target value is a consistency of the short fiber suspension in the pulper and is established by the weight of the old corrugated cardboards and the white water.

20           20. The apparatus as recited in claim 18, wherein the second target value is defibering time of the short fiber suspension in the pulper and is established by the weight of the old corrugated cardboards and the white water.

25           21. The apparatus as recited in claim 14, wherein the white water pipe comprises:

          a bottom plate blocking a portion of an outlet thereof, being tilted; and

          a slit upwardly formed at a side of the outlet.

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